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ABSTRACT

This paper considers a number of potential developments for the future of library science and the roles of information professionals. Among the projections are: (1) the use of computers and management science operations research methodologies will form the basis of decision making in libraries in the future; (2) a concerted effort will be made to emphasize quality more than quantity to replace the present "economy oriented formulae" with performance based formulae; (3) information services will be more expensive; (4) specialists will tend to bypass middlemen; (5) there will be greater cooperation between the producers and the consumers of information; and (6) computers will enable library administrators to develop a better understanding and appreciation of information services among legislators, higher education commissioners, and private benefactors to procure adequate funding. (Author/THC)

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"Future Challenges in Library Science"

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ABSTRACT

The use of computers and management science operations research methodologies will form the basis of decision making in libraries of the future. There will be a concerted effort made to emphasize quality more than quantity and replace present day "Economy oriented formulae" with performance based formulae. Information services will be costilier. Specialists will tend to bypass the middleman. There will be greater cooperation between producers of information and the consumers of information. Computers will enable library administrators to develop better understanding and appreciation of information services among legislators, higher education commissioners and private benefactors to procure adequate funding.

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FUTURE CHALLENGES IN LIBRARY SCIENCE

It is both fascinating and challenging to dwell on the future of my profession. The changeover from the industrial society to an information society has opened an array of unparalleled professional opportunities and responsibilities. But even though the profession is faced with fundamental changes, a complete retraining, more competition and calls for accountability and efficiency, it is a fantastic time for an enterprising librarian individually, professionally and institutionally.

As the economics of library services and the nature of information, as a commodity is analyzed, the profession will experience visibility, maturity, growth and appreciation. According to S. D. Neill, sixty percent of library school graduates by the twenty-first century will be self-employed or will work out of libraries under contract to small business, community groups, city hall, and even for individuals willing to pay for special search services. There will be a tremendous growth opportunity for librarians as information "brokers". Private enterprise will flourish, depending on the initiative and expertise of the information specialists.[1] Several roles have been suggested for academic librarians: information specialists, subject specialists, information, scientists, scholar librarians, researchers, information processors and teachers.

Academic libraries, or information centers as they'll most likely be called in the future, may not be very different in appearance from present day libraries, but they will certainly have multiplied their

potential to access information manyfold. They will have incorporated a number of computer terminals providing remote access to data bases, both national and international. Reference works would be carried by cable companies and made available to patrons at the library, or at home for a fee. Cable reference will do the same for factual information, just as paperbacks democratized reading.[2] Two-way interaction would have been refined and voice activated terminals would have been developed.[3]

As major journals go online, the use of machine readable online periodical interfaces will increase. Students, faculty, businessmen, lawyers, etc., would be the most likely users. The percentage of student users for their class assignments will increase in exactly the same way as the use of copying machines increased users. Public terminals will have smart card devices fitted to them. Users will have to pay for services up front. The student body would be the present generation of computer comfortable kids. They will be versatile in maneuvering the data, interacting and reacting to the online data and information services. Some libraries will even be using robots to shelve books, because books will still be the high use, high priority item on college campuses.[4]

Academic libraries like their parent institutions are in an age of accountability. There is pressure from the funding agencies and taxpayers to obtain the most cost effective service for every dollar spent. Specific accountability demands are being voiced. In such an environment, the goals for libraries are to (1) maximize their use of

available resources, (2) standardized the services, (3) decide on which services the library will provide, to whom and to what extent and (4) decide on how best to allocate the library staff, collection and other resources to produce these services. The library's clients will make the decisions about whether to use the libraries, how often and to what purpose, just as funding agencies decide how much support they'll provide for the services.[5]

Over the next decade or two a concerted effort will be made by library administrators and researchers to provide comprehensive costing formulae that will help them justify the costs for their funding agencies. For this purpose they will use computers, management science and operations research methodologies. Flow charts, PERT charts, GANTT charts will be used to analyze procedures and in making management decisions.[6] The new technology will enable them to analyze data statistically and explore alternative solutions with the help of histograms on the drawing board, and then decide on the best solutions.[7]

Even though librarianship is quientially a human science, there is a need to measure the managerial effectiveness of the operation and optimize services. Even though formulae have never been fully funded, they do form the basis of the need. They will be continually revised as the goals change, and they make it easy for the administrator to plan and to justify costs. American College and Research Libraries Association (ACRL) has a task force exploring the output measures of the college and university libraries. Future libraries will gather statistics on services provided (online/offline), material availability,

reference fill rate and library visits per capita. ALA's Library Administration and Management Association Division (LAMA) will play an active role in advising and developing formulae and standards.[8]

Quantitative measurement techniques can help to some extent in determining the degree to which information service objectives are being met. With the help of computers and by keeping detailed data, librarians have been able to determine which items circulate more than others and which items need duplication. They also will be able to determine the reading level, interest level and frequency of use of a particular library and its clientele once they develop an in-house system that they can maintain historical records of circulation statistics. Staffing needs could be calculated based on hours open, level of service and shelving and maintenance load.

All faculty members submit their requests to acquisitions department. Patron requests could also be fed to acquisition via terminals. They could generate statistics on the requests filled/or not filled. Administration could match up the library's collection needs, client's needs and plan for future acquisitions budget, based on the need.

On the interlibrary loan subsystem, OCLC/SOLINET has the capability of keeping statistics on the number of requests, the search time, and the costs, so it is giving ready data for use on the system. This would help analyze the costs and plan future budgets, personnel performance, etc.

Some libraries have compiled data on how long it takes to process a book by the automated method versus the manual method. They have

come up with a preliminary statistic that it is twenty percent cheaper to utilize the automated system.[9] Still, this is preliminary data and some more work needs to be done.

While all these quantitative methods do help, there is that intangible unquantifiable element of information service, that like an art, cannot be fully analyzed by mathematical methods and then quantified. Sitting at the reference desk one often meets a client who is not able to define his need and you end up questioning him in depth before you can really know what he is really seeking. This is an everyday experience. The way the reference sources list the information, the depth to which the researcher wants to dig, ... it is a human interaction that puts life into the information so retrieved. This element cannot be represented by quantitative means, yet. Formulae have been developed to evaluate quantitatively the reference process.[10] Online search services will help in assessing and refining their costs, quality and efficiency. For years librarians have performed these tasks manually at the reference desk. Technology has brought this activity to the lime light. Professional accountability and efficiency will be rewarded when realization of costs incurred are computed. The new integrated system will enhance the image of librarianship or information specialists, I believe.

So as far as college library administrators are concerned, this quantitative data is usable, but with an element of discretion, because there is a lot that is still not available in tangible, refined form to be useful in planning and managing information activity to suit the local needs. A lot of research is being conducted on the economics

of the library operation, so well reported by Nancy Van House in a recent article in Library Trends.[11] She clearly points out the need to develop better tools to measure services and to defend the budgets.

Accountability refers to the responsibility for being able to report to higher authorities as to the success or failure in achieving an objective. Assessment of performance is central to improvement. On the broadest scale, it refers to the process by which the managers of an institution are asked to show how effectively they have used the resources allocated to them. On the narrowest scale, it includes the process by which the achievement of individual goals are measured. Thus accountability is a factor of all administrative and professional work. Even matters of promotion and tenure require the presentation of evidence, which is evaluated and measured. Here the basic conflict is between quality and quantity. Both must be measured. The quantitative measurement of performance provides a means of measuring quality, since it can measure methods and objectives by showing how successful methods have been in meeting the objectives.[12]

The accountability of libraries is shaped in part by the unusual nature of information itself. Information is intriguingly different from most commodities. For example, it is possible to sell it and to keep it at the same time. It is difficult to value information apart from the use made of it. The same information has different values to different people, at different times and in different contexts.[13] Dr. Marc Porat in his landmark study included librarians among the "primary information sector," contributing to the production of 25.1

percent of the national GNP.[14] Like education, information also has value to people other than its immediate consumer.

It is a corollary, therefore, that as our society moves into the information age, librarians will require increased information gathering and analysis techniques in order to smoothly manage the changes ahead.

NOTES

[1]Neill, S. D. (1981), p. 47.

[2]Ibid., p. 50.

[3]Bowker Annual (1984), p. 111.

[4]LITA Newsletter (April 1985), p. 1.

[5]White, G. Travis (1977), p. 128.

[6]Leeson, M. (1981), p. 4-29.

[7]Harvey, C. M. (1979), p. 446.

[8]ALA/ACRL Standards (1985), p. 2.

[9]Cline and Sinnott (1983), p. 142.

[10]Kantor, Paul B. (1981), p. 51.

[11]Van House, N. (1984), p. 407-23.

[12]Murray, Martin (1981), p. 124.

[13]Van House, N. (1984), p. 408.

[14]Porat, Marc (1977), #77-12(1).

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